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THE MYSTERY OF IBOGAINES: Can an African psychedelic cure addiction?

By Steve Nadis

Looking for a new way to get high, Howard Lotsof may have found a way to reduce cravings for several addictive drugs. An hallucinogen used in African rituals may ease withdrawal symptoms and block neural transmitters in the brain's reward centers.

Wild claims have been made about ibogaine, an hallucinogenic substance derived from a shrub, *Tabernanthe iboga*, found in the Congo and Gabon. In West Africa, where it's reputed to permit ritual communication with dead ancestors, it has been called the strongest single force against the spread of Christianity and Islam. Most sweeping of all is the claim that one or two doses of ibogaine can break a person's addiction to heroin, morphine, cocaine, and amphetamine, as well as other addictive substances.

Howard Lotsof, president of the Staten Island-based NDA International, is responsible for this pronouncement as well as for bringing the substance to the attention of Western medicine. Lotsof, a former heroin addict, took ibogaine in 1962, looking for a new way to get high. After his 36-hour trip, he no longer craved heroin. Nor did he experience any withdrawal symptoms. He then shared the drug with six other addicts, five of whom lost their desire for heroin.

Lotsof secured patents on the use of ibogaine for treating drug and alcohol addiction. Although about 40 addicts have been treated in the Netherlands since 1990, ibogaine has not been approved for use in this country. Nevertheless, Lotsof managed to persuade several researchers to investigate its potential.

Among those is Stanley Glick, chairman of the Pharmacology and Toxicology Department at Al-

bany Medical College, whom Lotsof met in 1988. "I thought he was a crackpot," Glick admits, "but decided it was worth a few rats to look into his claims." Glick found that after an ibogaine injection, rats with free access to morphine reduced their narcotic intake. In other studies, ibogaine alleviated withdrawal symptoms of rats hooked on morphine. Glick saw that pretreatment with ibogaine curbed the rise in dopamine concentrations seen in rats given the opiate.



The neurotransmitter dopamine is thought to play a central role in addiction. Many abused substances trigger dopamine's release at various sites in the brain, including the nucleus accumbens, the so-called "reward center." It is here, scientists think, where dopamine elicits the euphor-

ic feeling that drives people and animals to excess. Enhanced levels of dopamine were not seen, however, in the nucleus accumbens of lab rats given an ibogaine cocktail before their morphine fix. Mysteriously, ibogaine's effects seems to vary from rat to rat, sometimes lasting a few days, sometimes weeks. The duration of effects, too, was surprising. Ibogaine may change to a form that stays in the system longer, Glick speculated, although no metabolite has been discovered.

Possibly, ibogaine produces long-term neural changes that are observable with a PET scan or other measurement. "It may be modifying neurons, changing the way a transmitter is stored, re-

leased, or taken back into cells," says Henry Sershon, a neuroscientist at the Nathan S. Kline Institute for Psychiatric Research at Orangeburg, New York.

Patricia Broderick of CUNY Medical School has pioneered a technique called in-vivo electrochemistry, relying on implanted miniature sensors that can measure the release of key chemicals in rodent brains. Broderick found that ibogaine blunts effects of cocaine by suppressing dopamine release. Another transmitter is involved; ibogaine initiates the release of serotonin, which in the presence of cocaine appears to inhibit dopamine cells. This drug, she says, "may help us fathom interactions between the two neurotransmitter systems."

Armed with research papers, Lotsof convinced the National Institute on Drug Abuse (NIDA) to start an ibogaine research effort in 1991. The agency will decide this year about human testing. Meanwhile, scientists at the University of Miami have applied to the FDA for permission to begin clinical trials. "Ibogaine's toxicity has never been tested," cautions Frank Vocci of NIDA. The drug's psychedelic properties, too, are a concern. Glick and a chemist are attempting to synthesize an analog that doesn't produce hallucinations. The big question, Glick says, is "whether you can separate side effects from potential therapeutic benefits."

It may take years to figure out ibogaine's basic chemistry. If and when the drug is approved, Vocci adds, we'll have just a vague understanding of how it works. Nor can addiction be wiped out with a single capsule. Other factors affect drug abuse. Even Lotsof admits his earliest claims went too far. The problem, he says, is "most people who use drugs don't want to stop." ∞